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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Russell Vaughan Meddes

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EXAMINER

RO, YONG-SUK

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,998	Applicant(s) MEDDES ET AL.	
	Examiner YONG-SUK RO	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/9/2010 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. All dependent claims objected to because of the following informalities: All dependent claims should start with “The” not “A”. Appropriate correction is required.

Claim 1 is objected to because of use of word “normal use”. Examiner is unsure what it refers to. It should refer to the specific operation.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the fibre arrangement in claims 10-12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-9 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brieger (4756371) in view of Yang et al. (6520258)

Brieger discloses a similar device, comprising:

Re claims 1, 9:

- a carrier 60 for at least one shaped charge S_H , S_A (Col. 6:40, 46-48, Fig. 5).
- the carrier being disposable in use within a well bore 11.
- the carrier 60 comprising a housing being non-frangible in normal use (Col. 6:42-43, Figs. 5, 6). Fig. 6 depicts the housing 60 remains intact after firing of shaped charge.

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- the housing being arranged substantially to contain debris 72 created within the carrier 60 as a result of firing of the at least one shaped charge (Fig. 6, Col. 6:42-45, 58-62).

Bierger is silent on the housing being a composite material that is not steel.

Yang et al. teach the carrier/housing 512 formed from a composite material that is not steel, i.e., plastic or elastomer (i.e., fig. 3A, col. 7:12). The inner housing 510 is intended to absorb shock waves (i.e., col. 6:67-7:1) and the carrier is made of material similar to that of the carrier of instant application so it is capable of containing debris.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the material of housing in Berger with the composite material taught by Yang et al. in order to achieve predictable debris containment, in an attempt to eliminate the obstruction in the passage of tool after firing.

Yang et al. further disclose,

Re claim 2:

- the housing 512 comprises an inner housing 510 which is at least partially encompassed by an outer composite material overwrap (i.e., fig. 3A, col. 7:32-55)

Re claim 3:

- the inner housing 510 is substantially of metal (i.e., col. 7:42)

Claim 4 is pertinent to claim 1.

Re claim 5:

- the housing comprises a thin-walled cylinder 512.

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Bierger further disclose

Re claims 7, 8:

- the carrier 60 has at least one port 68_A, 68_H formed therein (Fig. 5)

Re claim 13:

- a perforating gun T comprising a carrier 60 (Fig. 5).

Brieger further discloses a similar method, comprising:

Re claim 14:

- providing a perforating gun T (Fig. 5).
- positioning the perforating gun T in the well borehole 11 (Fig. 5).
- perforating the borehole by firing the perforating gun (Fig. 6).
- retrieving debris 72 resulting from the step of perforating by recovering the carrier 60 of the perforating gun T (Fig. 6), the carrier 60 containing debris resulting from the firing (Col. 6:42-45, 58-62).

4. Claims 10-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Brieger (4756371) and Yang et al.(6520258) as applied claims above, in view of Willis et al. (5564499).

Re claims 10-11: Brieger and Yang et al. is silent on composite material including longitudinally arranged fibers in claim 10, and composite material including circumferentially arranged fibers in claim 11.

Willis teaches an explosive carrier used in a wellbore where that carrier is formed from plastic composite material with fiber glass (i.e., col. 3:23-26). Therefore, it would be obvious to use a plastic composite material as taught by Willis in the system of Brieger and Yang et al. in order to achieve predictable debris containment, in an attempt to eliminate the obstruction in the passage of tool after firing.

Further, it is noted that the mechanical property, such as tension and compression, of composite material depends on the arrangement of fiber. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation”. In *re Antonie*, 559 F2d, 618, 195USPQ 6 (CCPA 1977).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the fiber arrangement longitudinally or circumferentially by routine optimization of fiber, in order to achieve optimum mechanical properties of the composite material.

Re claim 12: Brieger and Yang et al. is silent on circumferentially arranged fibers have respective predetermined tensions.

Willis teaches an explosive carrier used in a wellbore where that carrier is formed from plastic composite material with fiber glass (i.e., col. 3:23-26). Therefore, it would be obvious to use a plastic composite material as taught by Willis in the system of Brieger and Yang et al. in order to achieve predictable debris containment, in an attempt to eliminate the obstruction in the passage of tool after firing.

Further, it is noted that the mechanical property, such as tension and compression, of composite material depends on the arrangement of fiber. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation”. In *re Antonie*, 559 F2d, 618, 195USPQ 6 (CCPA 1977).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the fiber arrangement circumferentially by routine optimization of fiber, in order to have ideal predetermined tension of the composite material.

Response to Arguments

5. Applicant's arguments filed 4/25/2011 have been fully considered but they are not persuasive.

Regarding arguments A-B: Applicant argues Yang et al. does not disclose a sleeve 512 that is composite material. However, independent claims require a housing *at least partially* formed from a composite material. Yang et al. clearly teaches encapsulant/shock impeding material 510 that is composite material (i.e., pgh. 7:35-43, fig. 3A) and it receives/encapsulates charges 506 (i.e., pgh. 6:67, 8:45-48). Note that “receives/encapsulates charges” reads on acting as housing and fig. 3A clearly depicts 510 forms an inner housing.

Regarding argument C: Yang et al. further teaches 510 protects other explosives from shock waves generated by detonation of an explosive, and absorbs detonation shock energy to reduce damage to perforating equipment, casing, and other equipment (i.e., 6:1-10), which indicates 510 is non-frangible, thus it is capable of containing debris. Note that absorbing shock energy can not be occurred if it is frangible. For argument regarding inner housing see description above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YONG-SUK RO whose telephone number is (571)270-5466. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shane Bomar can be reached on 571-272-7026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y.R/

/KENNETH L THOMPSON/
Primary Examiner, Art Unit 3676